

**IN THE CLAIMS:**

1. – 25. (*Cancelled*).

26. (*New*) A plasma processing apparatus for applying a plasma process to an object to be processed, the plasma processing apparatus comprising:

a process chamber in which the object to be processed is subjected to the plasma process;

a plasma source that generates plasma;

a gas introducing portion configured to introduce a gas into the process chamber;

a first vacuum device connected to the process chamber so as to evacuate a volume inside the process chamber;

a second vacuum device provided to the gas introducing portion so as to evacuate a volume inside the gas introducing portion,

wherein the gas introducing portion comprises:

a plurality of gas nozzles;

an inlet port through which the gas is introduced into the gas nozzles; and

an outlet port through which the gas is evacuated from the gas nozzles, the outlet port having a diameter larger than a diameter of the gas nozzles.

27. (*New*) The plasma processing apparatus as claimed in claim 26, wherein the gas introducing portion is configured as either:

(a) a radial flow type in which the gas flows from a center to a periphery; or

(b) a showerhead type in which the gas flows through a plurality of apertures provided in a surface of the showerhead facing the object to be processed.

28. (*New*) The plasma processing apparatus as claimed in claim 26, wherein the gas introducing portion has an annular passage through which the gas flows.

29. (New) The plasma processing apparatus as claimed in claim 28, wherein the annular passage is connected to the inlet port, the outlet port, and the gas nozzles, and the gas nozzles are located along the annular passage at substantially equal intervals.

30. (New) The plasma processing apparatus as claimed in claim 26, wherein the gas introducing portion includes:

a first gas introducing portion configured to supply a first gas to the process chamber, and

a second gas introducing portion configured to supply a second gas to the process chamber.

31. (New) The plasma processing apparatus as claimed in claim 26, further comprising a slot antenna having a plurality of slits configured and arranged to guide a microwave having a predetermined frequency which is determined by the plasma process to be applied to the object to be processed.

32. (New) The plasma processing apparatus as claimed in claim 31, wherein a density of the slits is substantially uniform in a radial direction of said slot antenna.

33. (New) A gas introducing portion adapted to introduce a gas into a process chamber of a processing apparatus, the gas introducing portion comprising:

a plurality of circumferentially arranged gas nozzles through which the gas is introduced into the process chamber;

an inlet port through which the gas is supplied; and

an outlet port through which the gas is evacuated from the gas introducing portion,

wherein a diameter of the outlet port is larger than a diameter of the gas nozzles.

34. (New) The gas introducing portion as claimed in claim 33, being configured as either:

- (a) a radial flow type in which the gas flows from a center to a periphery; or
- (b) a showerhead type in which the gas flows through a plurality of apertures provided in a surface of the showerhead facing the object to be processed.

35. (New) The gas introducing portion as claimed in claim 34, further comprising an annular passage through which the gas flows.

36. (New) The gas introducing portion as claimed in claim 35, wherein the annular passage is connected to the inlet port, the outlet port, and the gas nozzles, and the gas nozzles are located along the annular passage at substantially equal intervals.

37. (New) A plasma processing apparatus for applying a plasma process to an object to be processed, the plasma processing apparatus comprising:

- a process chamber in which the object to be processes is subjected to the plasma process;

- a plasma source configured to generate plasma;

- a gas introducing portion configured to supply a gas to the process chamber;

- a vacuum device configured to evacuate a volume inside the process chamber;

and

- a bypass line having a first end connected to the gas introducing portion and a second end connected to the vacuum device so as to evacuate a volume inside the gas introducing portion,

- wherein the gas introducing portion comprises:

- a plurality of gas nozzles;

- an inlet port through which the gas is introduced into the gas nozzles;

- and

- an outlet port through which the gas is evacuated from the gas nozzles, the outlet port having a diameter larger than a diameter of the gas nozzles.

38. (New) The plasma processing apparatus as claimed in claim 37, wherein the gas introducing portion is configured as either:

- (a) a radial flow type in which the gas flows from a center to a periphery; or
- (b) a showerhead type in which the gas flows through a plurality of apertures provided in a surface of the showerhead facing the object to be processed.

39. (New) The plasma processing apparatus as claimed in claim 37, wherein the gas introducing portion has an annular passage through which the gas flows.

40. (New) The plasma processing apparatus as claimed in claim 39, wherein the annular passage is connected to the inlet port, the outlet port, and the gas nozzles, and the gas nozzles are located along the annular passage at substantially equal intervals.

41. (New) The plasma processing apparatus as claimed in claim 37, wherein the gas introducing portion includes a first gas introducing portion configured to supply a first gas to the process chamber and a second gas introducing portion configured to supply a second gas to the process chamber.

42. (New) The plasma processing apparatus as claimed in claim 37, further comprising a slot antenna having a plurality of slits configured and arranged to guide a microwave having predetermined frequency which is determined by the plasma process to be applied to the object to be processed.

43. (New) The plasma processing apparatus as claimed in claim 42, wherein a density of the slits is substantially uniform in a radial direction of said slot antenna.